Tasks for research functions

Homework Writing Service

We train to solve Task number 12 from the Mathematics of the past years recommended as training. Task number 1.

Find the smallest function of the function:

y = x3 3x2 + 2

On cut

[1; 4]

Solution

Find a derivative of a given function:

U '= 3x2 6x = 3x (x 2)

The derivative refers to zero at points 0 and 2, the specified segment belongs to the number 2. Determine the signs of the derived function and will be shown in the figure (Fig. 1) function behavior:

Fig.1

At point x = 2, the specified function has a minimum that is its smallest value on a given segment. We will find this smallest meaning:

(2) = 8 3 4 + 2 = - 2

Answer: 2. Task number 2

Find the greatest value of the function:

y = x3 6x2

On cut

[-3; 3]

Solution

Find a derivative of a given function:

U '= 3x2 12x = 3x (x 4)

We find zeros derivative:

<=>

x1 = 0.

x2 = 4.

Since, x = 0

We define the signs of the derived function and depicting in Figure (Fig.2) The behavior of the function:

Fig.2

At point x = 0, the specified function has a maximum that is its greatest value on a given segment. We find it the greatest value:

y (0) = 0

Answer: 0.